Listing of Claims:

1. (Original) A process for formation of a layer of tantalum pentoxide (Ta₂O₅) on a carrier material, comprising:

heating carrier material to a heating temperature of between approximately 200°C and 400°C; and

circulating a gas mixture comprising tert-butyliminotris (diethylamino) tantalum (t-BuN=Ta(NEt₂)₃) in contact with the heated carrier material under an oxidizing atmosphere thereby forming a layer of tantalum pentoxide (Ta₂O₅) on the carrier material, the partial pressure of the tert-butyliminotris (diethylamino) tantalum being greater than or equal to 25 mTorr.

- 2. (Original) The process according to Claim 1, wherein the heating temperature is between approximately 300°C and 350°C.
- 3. (Original) The process according to Claim 1, wherein the gas mixture is circulated in a chamber in which the carrier material is placed and in that the partial pressure of the tert-butyliminotris (diethylamino) tantalum is less than the vapor pressure of tert-butyliminotris (diethylamino) tantalum corresponding to the temperature of the coldest point in the chamber.
- 4. (Original) The process according to Claim 1, wherein the partial pressure of the tertbutyimiotris (diethylmino) tantalum is between approximately 65 mTorr and 70 mTorr.

- (Original) The process according to Claim 1, wherein the gas mixture comprises oxygen.
- 6. (Currently Amended) The process according to Claim 1, wherein the gas mixture comprises a carrier gas. , for example nitrogen.
- 7. (Previously Presented) The process according to Claim 1, wherein the gas mixture is circulated in a chamber in which the carrier material is placed and in that the replacement time of the gas mixture in the chamber is between 0.1 second and 10 minutes.
- 8. (Currently Amended) The process according to Claim 1, wherein the carrier material is a semi-conducting material. , for example silicon.
- 9. (Original) The process according to Claim 1, wherein the carrier material is a metallic material.
- 10. (Previously Presented) The process according to Claim 1, wherein the carrier material is chosen from the group formed by titanium nitride, tantalum nitride, copper, platinum, aluminum, titanium, tantalum and ruthenium.
- 11. (Original) The process according to Claim 1, wherein the carrier material is a dielectric material.

- 12. (Previously Presented) The process according to Claim 1, wherein the carrier material is chosen from the group formed by silicon dioxide (SiO₂), silicon nitride (Si₃N₄), alumina (Al₂O), ZrO₂ and HfO₂.
- 13. (Currently Amended) The process according to Claim 1, wherein the thickness of the layer of tantalum pentoxide formed is of the order of a few tens of nanometers.
- 14. (Original) The process according to Claim 1, wherein the carrier material is positioned on a circular wafer having a diameter of substantially one of 200 mm and 300 mm.
- 15. (**Original**) The process according to Claim 1, wherein the layer of tantalum pentoxide is for incorporating in one or more electronic integrated circuits.

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- 40. (Previously Presented) The process according to Claim 1, wherein the gas mixture is circulated in a chamber in which the carrier material is placed and in that the replacement time of the gas mixture in the chamber is between 1 second and 10 seconds.
- 41. (New) The process according to Claim 1, wherein the gas mixture comprises nitrogen as a carrier gas.

- 42. (New) The process according to Claim 1, wherein the carrier material is silicon.
- 43. (New) The process according to Claim 1, wherein the thickness of the layer of tantalum pentoxide formed is approximately 44 nanometers.